

IDAHO DEPARTMENT OF FISH & GAME

Joseph C. Greenley, Director

FEDERAL AID TO FISH AND WILDLIFE RESTORATION

Job Completion Report

Project F-18-R-24



STATEWIDE FISHING HARVEST SURVEY

Job II. Check Station Surveillance of Major Salmon
Fisheries in Idaho

Period Covered: 16 May 1977 to 28 February 1978

by

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March, 1978

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JOB COMPLETION REPORT

State of Idaho Name: STATEWIDE FISHING HARVEST SURVEY

Project No. F-18-R-24 Title: Check Station Surveillance of
Major Salmon Fisheries in Idaho

Job No. II

Period Covered: 16 May 1977 to 28 February 1978

ABSTRACT

Between 21 May and 4 July 1977, chinook salmon anglers in the upper Salmon River drainage caught an estimated 900 salmon in the main stem and an estimated 220 from the Middle Fork. Check stations operated to monitor these fisheries for possible overharvest disclosed fishing success only half that of prior years.

Post season field work showed that most chinook spawners remained in lower river areas until just prior to spawning time and were not in the areas normally fished by anglers. This prevented a potential overharvest on what appeared to be an extremely vulnerable resource.

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RECOMMENDATIONS

We recommend that this project be viewed as a one-time procedure to monitor the unusual circumstances of 1977 and not be established on an annual basis.

INTRODUCTION

As in most of the Western United States, the summer of 1977 brought a drought crisis to Idaho streams and rivers. Chinook salmon migration routes and spawning areas showed some of the lowest water flows ever recorded or observed. This situation, coupled with a moderate count of 43,000 Idaho-bound salmon over Ice Harbor Dam, caused concern within the Idaho Department of Fish and Game about the impact of the 1977 upper Salmon River sport fishery on what appeared to be an extremely vulnerable resource.

To monitor this fishery and maintain close vigilance over the sport harvest of chinook salmon, a check station program was initiated during the summer 1977 salmon fishing season in the upper Salmon River.

OBJECTIVES

To monitor chinook salmon sport fishery data on a weekly basis by standardized check station methods. Managers correlate catch rates and fishing pressure with dam counts and water conditions to obtain usable and timely data.

To help evaluate returns to the creel from various hatcheries by checking for marked fish in the anglers' bag.

TECHNIQUES USED

Between 21 May and 4 July 1977, we operated three salmon angler check stations at major egress points through which a high percentage of Idaho's Salmon River chinook anglers return to their homes.

We collected the following information: dates, number of resident and nonresident anglers, days fished, hours fished, adult salmon caught, jack salmon caught, stream or river section fished. When available, we inspected the fish for marks, clipped fins or tags, sex, and measured their fork length to the nearest inch.

Station personnel inspected the salmon permit card of each angler and marked the permit with a conductor's punch to the right of each salmon recorded on the permit, regardless of when caught.

Each Monday morning, check station operators summarized the previous week's records and telephoned the information to the Salmon Subregional Office. Regional personnel compiled the data and forwarded it to Boise Headquarters.

Biological aides, college students on summer employment, operated the check stations. They received assistance during periods of heavy traffic from Conservation Officers and field staff personnel. Travel trailers were used as housing. We operated each station from 1200 to 2000 hr, Thursdays through Mondays, with only one or two minor variations.

Also during the 1977 season, we conducted a roving census of salmon anglers fishing in areas downriver from and not encompassed by the check stations. Angler success and numbers were assessed on a periodic basis, times of censusing varied.

FINDINGS

During the 1977 chinook salmon season, check station operators conducted 2,901 angler interviews. These anglers reported fishing 32,222 hours to catch 331 salmon, an average of 97 hours per fish.

Only the main stem of the Salmon River and the Middle Fork of the Salmon River were open to angling for chinook salmon in 1977. Upper limits open to salmon fishing on the main stem were shortened from previous years also. No tributary streams other than the Middle Fork were open to salmon fishing.

Of the 331 salmon recorded through the stations and by the roving census, 88 were caught in the Middle Fork. The remaining 243 were caught in the main stem Salmon River.

The season set for the 1977 fishery originally ran from 5 May to 31 July. However, because of concern for the vulnerability of the resource due to the extreme drought conditions, the season was shortened to terminate 5 July.

Similar check station operations were conducted between 1970 and 1974 (Reingold 1976) and data is comparable. During those 5 years, numbers of anglers interviewed ranged from 819 to 4,256, dictated primarily by water conditions. This compares to the 2,901 anglers interviewed in 1977. Also during those 5 years, harvest estimates ranged from 280 to 1,378 for these same river sections. Hours per fish ranged from 27 to 48 hours per fish. This compares to 331 salmon harvested and 97 hours per fish in 1977 (Table 1).

Table 1. Comparative salmon angler check station data 1970-1974 and 1977.

	1970	1971	1972	1973	1974	1977
Anglers	2,679	955	1,654	4,256	819	2,901
Hours	29,283	14,664	24,884	56,430	13,311	32,222
Fish	972	553	687	1,378	280	331
Hours/fish	30	27	36	41	48	97

Effort during 1977 was very high, due primarily to the expectation of good fishing because of low, clear water conditions. However, the hours per fish and total harvest indicate that the fish were not readily available. Post-season field work showed that the bulk of the salmon run was not in the area during the open season.

The prime concern of the check station operation; to monitor the fishery for possible overharvest, did not materialize during the 6-week open season. Past work with earlier check station data (Reingold 1976) indicated that the check stations observed a relatively stable percentage of the total chinook harvest over the 5-year period they operated. This averaged approximately 40% for the Middle Fork and 27% for the upper Salmon River area. Using these figures, a rough estimate of total harvest is 220 fish from the Middle Fork and 900 fish from the main Salmon River. Confidence limits on these figures would naturally be very wide. However, all data indicates that anglers did not harvest an excessive amount of chinook during the 1977 fishing season.

DISCUSSION

The drought of 1977 left salmon spawning beds with lower flows than anyone had earlier observed or recorded. Adult chinook were seen in some of these spawning streams as early as the third week in May; considerably earlier than past years' observations. These early sightings led to a preliminary appraisal that the fish had arrived on the spawning beds earlier than normal in extremely low numbers. Fish could be easily seen in the low streams and considerable concern was demonstrated when Idaho Indian tribal members commenced spear fishing activities.

During early July, Fish and Game field personnel used scuba and snorkel observations to check lower river areas for the presence of additional adult spawners. Through those observations and interviews with float boaters and anglers on the Middle Fork and main stem of the Salmon River, indications were that no large numbers of chinook salmon were holding in these lower river areas.

Extreme concern for the jeopardy of the resource led to the closure of the Indian fishery on the tributary streams, which was supported by the councils of the various tribes involved.

As the time approached in mid-August when chinook normally begin constructing redds and spawning, previously deserted spawning beds showed good numbers of chinook salmon spawners. The fish appeared to be in excellent body condition with few wounds, scars or fungus invasions. Spawning occurred almost immediately after their arrival and was completed by the normal time. Annual redds counted disclosed the count to be approximately 20% below the previous 5-year average for the Salmon River drainage.

Where these spawners held during the pre-spawning period is a subject of some conjecture. The excellent body condition of the fish indicates they were possibly in deep, cool waters, perhaps in the extreme low Salmon or possibly in Hells Canyon of the Snake River above the mouth of the Salmon.

Irregardless of where they were, it is obvious that these upriver chinook salmon stocks have an inherent survival behavior to cope with extreme drought conditions. The summer of 1977 was probably not the first of its kind in the thousands of years these fish have been returning to the Salmon River.

LITERATURE CITED

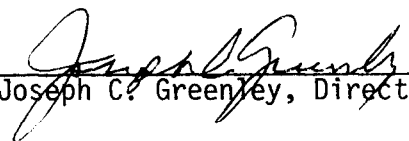
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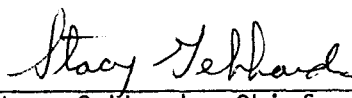
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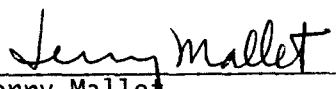
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